(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
18 September 2003 (18.09.2003)

PCT

(10) International Publication Number
WO 03/077579 A1

(51) International Patent Classification[7]: H04Q 7/38

(21) International Application Number: PCT/CH02/00148

(22) International Filing Date: 12 March 2002 (12.03.2002)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant *(for all designated States except US)*: ASCOM AG [CH/CH]; Belpstrasse 37, CH-3000 Bern 14 (CH).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: WU, Raymond [GB/CH]; Auroraweg 7, CH-3185 Schmitten (CH).

(74) Agents: ROSHARDT, Werner, A. et al.; Keller & Partner Patentanwälte AG, Schmiedenplatz 5, Postfach, CH-3000 Bern 7 (CH).

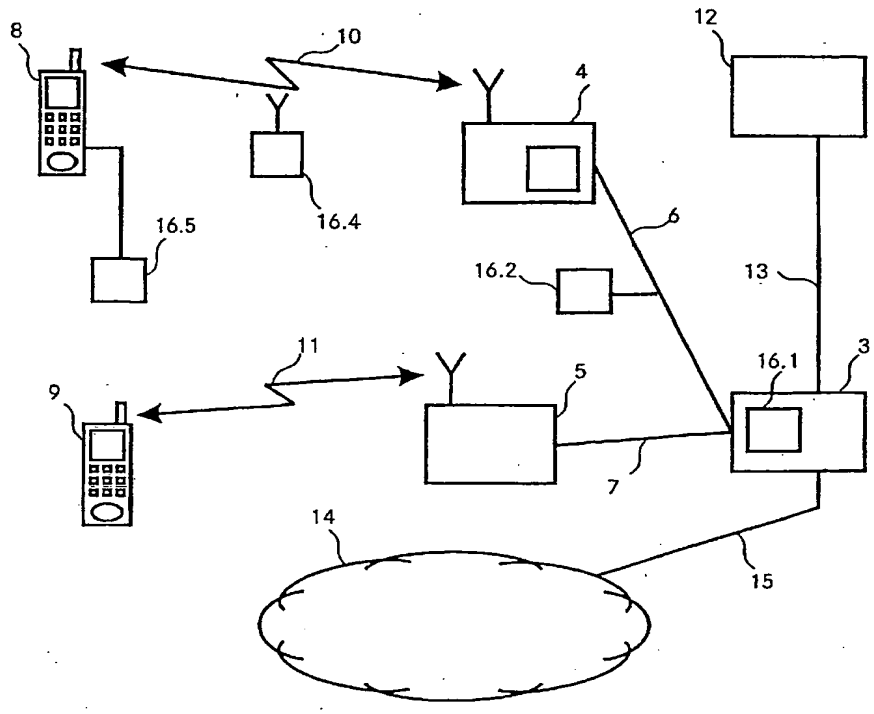
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

[Continued on next page]

(54) Title: RADIO RESOURCE ALLOCATION IN A RADIO COMMUNICATION NETWORK



(57) Abstract: In a radio communication system, where a user (8, 9), who wants to transmit data, is allocated a certain transmission capacity. It is a general goal to have an efficient resource allocation algorithm. In order to serve as much subscribers of the network as possible, the allocation of the available resources is improved by determining an utilization factor, which is some kind of measure for the exploitation of the transmission capacity allocated to a user. This is done by analysing the communication activities of the user (8) by monitoring for example directly the radio link (10) between the users terminal (8) and the corresponding basestation (4) with a monitoring device (16.4). The monitoring of the communication can also be done in other locations (16.1, 16.2, 16.3, 16.5), e.g. by monitoring the communication link (7) between the basestation (4) and the mobile switching centre (MSC)(3) or by directly monitoring one or more of the lower layers of the transmission protocol stack directly within one of the devices (8, 4, 3, 5, 9) being involved in the communication of the user. Then, the allocation of the resources, which is for instance carried out by the MSC (3), is done depending on this utilization factor. When knowing the utilization factor for a specific user, the resource allocation can be improved by accordingly adjusting or modifying the underlying radio resource allocation algorithm utilized by the MSC (3).

WO 03/077579 A1